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ABSTRACT

Curricular change for colleges for the twenty-first century is addressed. It is argued that the simple presentation of facts and solutions in schooling must be altered. Students must be prepared for an adaptive mode of living and learning since jobs may change drastically every 5 to 10 years. Criteria that can be used to judge curricula for the future include: emphasis on skills of decision-making, problem-solving, creating, evaluating, analyzing, and acting; educating students to contend with problems that do not now exist by learning to deal with the unknown and to structure problems so as to grasp what the result will be and then work for change; attending to how knowledge is created and to methods and styles of inquiry that have led to its creation; provision for substantial individuality within each student's degree program; teaching students to classify information, to change categories, to move from concrete to abstract and back, and to synthesize information realistically; and recognition of a coming leisure society that emphasizes interpersonal relations and human development. Changes that are predicted for the future are also addressed. (SW)

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CURRICULA FOR THE TWENTY-FIRST CENTURY

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CURRICULA FOR THE TWENTY-FIRST CENTURY

Robert Theobald contends that the study of problems whose solutions are known is training, while the study of problems whose solutions are unknown is education. Using such a distinction between "training" and "educating," it is not unreasonable to estimate that approximately one-half of our university and college undergraduate education falls under the category of "training"--the simple presentation of facts and solutions. It is the thesis of this paper that such a situation must be altered as we prepare the curricula for the 21st-century.

It is interesting to note that the students who entered our programs this past fall, and who begin their careers immediately upon graduation, will spend approximately 75% of their professional lives in the 21st-century. Our task, then, is to prepare them now for this experience.

It may be absolutely foolhardy, Arthur Levine says a "guessing game," to predict what will happen to the university curriculum over the next fifteen years. On the other hand, perhaps it is not so difficult at all given our penchant to resist change. Phillip Coombs claims that a global photograph of all of the world's schools, colleges and universities on any given day in the early 1980's would reveal a picture which would look almost exactly the same as that taken ten, twenty or thirty years ago. We are still faced with the traditional pessimistic attitudes about curricular change, for example, the words of one anonymous commentator of the past: "The curriculum does not

matter. If it did matter, we could not do anything about it. If we could do something about it, we would not know what to do."

We can ill afford to cultivate attitudes such as this in light of the tremendous changes occurring in our society and especially in light of those to come. It may be as difficult as the old bromide suggests that it is easier to move a cemetery than it is to move the faculty to change the curriculum, but if the university is to remain meaningful and resonant with society as a whole, there is no other choice.

The problem of designing a curriculum for the future is additionally complicated, because as Paul Valery reminds us "the future is not what it used to be." We have been warned by Alvin Toffler, John Naisbitt and a host of others about the frightening future whereby we will be overwhelmed by change and experience shocks of various natures. So today we confront a double problem of trying to figure out what's in the future and then devising a curriculum that meets these contingencies.

Later in this paper, it will be necessary to speak more extensively about some of the changes our modern-day prophets are predicting for the future, but for the moment, let's take a quick look at where we are today in reference to the curriculum in higher education. James Hall, the president of Empire State College in New York, doesn't seem to think that we are in a very good position. "As the ninth decade of this century begins," he says, "educational institutions are floundering in an identity crisis. Shaken by a decade of rapid changes in students,

curriculum, and budgets, American colleges and universities are seeking to regain the stability and clarity of the past by reassessing the questions: 'What is an educated person?' and 'How best can educational institutions arrive at socially and intellectually responsive curricula for today's world?'" A 1979 Gallup Poll on education expressed a declining confidence in schools, which led John Naisbett to comment: "For the first time in the nation's history, adults considered themselves better educated than young people." Toffler says that what passes for education today even in our best schools and colleges is a "hopeless anachronism." He claims our schools are facing backward toward "a dying system, rather than a forward emerging new society," that too much of our energy is generated on "cranking out industrial men," people who are prepared only for survival in a system "that will be dead before they are."

In the past few months we have been made aware of three major national reports on higher education, all of which have come to remarkably similar conclusions about the state of undergraduate education in this country. All have singled out an incoherent curriculum as part of the problem. One of these studies, the American Association of Colleges Report Redefining the Meaning and Purpose of the Baccalarueate Degree, claims that almost anything goes now in the typical college curriculum, that we are more confident about the length of the curriculum than its content and purpose. The report reads: "There is so much confusion as to the mission of the American college and

university that it is no longer possible to be sure why a student should take a particular program of courses."

Obviously, then, there is considerable discussion today about the need for curriculum revision. Before we talk about particular change in the curriculum, especially so as to prepare our students to work and live successfully and effectively in the 21st-century, let's return for a moment to the discussion about the future and the tremendous change which our modern-day prophets say is in store for us.

Time and time again in discussions about education and the future, we are told that more learning will occur outside of the classroom, and a significant amount of that in the home, that occupational skills will need to be revised every few years, that compulsory schooling time may be shortened, that life-long learning abilities must be a characteristic of the future, that more and more work will move out of the factory and the office into the community and into the home (Toffler, in his book Third Wave, suggests, by the way, that the factory whistle will vanish and the clock will lose its power), and finally that there will be a tremendous amount of diversity in opposition to further standardization in our lives.

Obviously, an expanding communication technology is at the base of this new age wherein we will be making the shift from smokestack industries to information and service-oriented industries. John Moseley suggests that "as we visualize the turn into the 21st-century, we will have had the information explosion and the development of communication technology that

makes tremendous amounts of information available to the individual. Peter H. Wagschal, director of the Future Studies Program at the University of Massachusetts, claims that we will soon witness "the demise of the written word as our primary means of storing and communicating information." Perhaps one of the most radical predictions of the future affecting education is that of educational consultant Ronald E. Barnes who imagines a social historian speaking to educators in the year 1996 in these words:

We have moved from a book-centered curricular approach to the utilization of unlimited learning resources. Clearly we rely less on books today than we used to. It is a poverty-stricken classroom that does not use open and closed circuit TV, community resource people, films, tapes, and many other resources... Texts went out in the late eighties, I believe, when we finally understood that since all students are unique and different, they need not begin at the same place and end at the same place in a set amount of time.

We will also face the continual changes requiring coping skills, possibly dealing with options of space frontiers and the new understandings and adaptations necessary to contend with instant communication and travel. We are already seeing the need for a greater understanding of world cultures and languages and this is to become a more universal educational requirement of the future.

Our government is presently experimenting with hypersonic aircraft which will mean that no major city of the world will be more than two to three hours away. Toffler believes that the new technology of tomorrow will require not "millions of lightly-lettered men, ready to work in unison at endlessly repetitious jobs...but men who can make critical judgments, who can weave

their way through novel environments, who are quick to spot new relationships in the rapidly changing reality. It requires men who in C. P. Snow's compelling term, "have the future in their bones." John Naisbitt, author of Megatrends, contends that these rather dramatic changes in the future simply mean that we are "moving from the specialist who is soon obsolete to the generalist who can adapt." It is no longer sufficient, Toffler adds, for Johnny to "understand the past or even the present... Johnny must learn to anticipate the directions and rate of change--learn to make repeated, probabilistic increasingly long-range assumptions about the future--and so must Johnny's teachers."

We are all becoming conscious of characteristics in our society which appear to back up these claims of a knowledge explosion, estimated to double the amount of information available in the world every five years, bringing radical shifts in occupations and in education. About 8,000 types of jobs disappeared from the United States labor market from 1949 to 1965, essentially because of the spread of automation. At the same time, about 6,000 new jobs developed. In 1950, 17% of the population worked in jobs related to information, and now in the early eighties approximately 60% of us work as programmers, teachers, clerks, secretaries, accountants, stock brokers, etc. involving a great amount of information transfer. By the year 2000, it is estimated that 86% of all jobs will be in the service sector. Within this present calendar year, one estimate claims that 75% of our jobs involve computers in some way.

Can we in higher education respond as quickly as we should to these approaching shock waves of the future? We do not have a very good track record for fast change in the higher education curricula. Obviously what is needed today is a most fundamental change in the curriculum which will have major impacts upon the education of our young people. One of the greatest problems in this regard may be in getting the faculty's attention and commitment toward curricular change. I think we are all aware of the difficulty of getting the faculty to read and think about educational issues. For that matter, deans and department heads may not do much better. We frequently enter curricular meetings determined only to protect our own turf and specialties.

Though curricular review and reform is not easy, we live in a day when there is no choice. We will soon be literally forced to make some rather important changes in the curriculum to ready our students for work in the next century. What, then, are some specific guidelines for curricular change that the future demands of us?

I wish to call your attention to a few basic principles which should be at the very base of any curricular change which looks toward the future. You may note that there is a common thread running through most of these principles and that is: contending with the concept of change. We simply must prepare our students for an adaptive mode of living and learning in a time when jobs will change drastically every 5 to 10 years, where people will be displaced frequently and more constantly

from one occupation to another. We will need to alter the belief that one's formal education should be completed by age 25. In Future Shock, Toffler says he is appalled by "how little is actually known about adaptivity, either by those who call for and create changes in our society, or by those who supposedly prepare us to cope with these changes." He believes that those of us within the ivy walls who talk so bravely, as we are here today, about "educating for change," and "preparing people for the future," know virtually nothing about how to do it. I'm not sure that there are many of us in this room today who are prepared to answer that charge. It is time for us to learn more about educating for change.

How do you educate for change? As I read the literature on revising the curriculum to meet the demands of the future, it appears to me that there is quite a bit of agreement upon several criteria by which one should judge such a curriculum so claiming to prepare students for life in 21st-century America.

1. Do the skills of decision-making, problem-solving creating, evaluating, analyzing and acting take precedence over the acquisition of facts?
2. Are students educated to contend with problems which do not now exist; learning to deal with the unknown; able to structure problems to grasp what the result will be, and will they be equipped for change?
3. Is attention given in the curriculum to how knowledge has been created, to the methods and styles of inquiry which have led to its creation; in short, is there emphasis on the "how," allowing the culture of the time to decide the "what" that is important to it?

4. Is there provision for a great amount of individuality within each student's degree program which may mean some movement away from a standardized, rather fragmented series of required subjects?
5. Is each student taught how to classify information, to evaluate its veracity, how to change categories when necessary, and to move from concrete to abstract and back, how to synthesize information in realistic ways?
6. Will the student have learned how to learn upon graduation, having found somewhere in the experience of education a "life know-how"?
7. Is there a recognition of the coming leisure society which may place more emphasis upon interpersonal relations, human development and the dignity of man?

As we discuss the characteristics of life in the 21st-century and learn of the tremendous technical expansion, it may appear that tensions may occur in the curricula of higher education between the humanistic and technological emphasis. This need not be. In fact, both of these points of view are crucial for an educated person in the 21st-century. Fred Hechinger of the New York Times points up the harmonizing relationship which must occur between these two philosophies:

The visions of brave new electronic worlds of microchips and robots raise simultaneous demands for a schooling that looks to the future by learning from the past. Yes, the computer must be mastered by all, regardless of race, sex and economic condition. But at the same time...the computer must be mastered by young people who are secure in a broad understanding of what used to be called general education--including language, history, economics, mathematics, science, the arts; in short, the human condition.

How much time do we have to make these changes? I would remind you again that our present students are going to be applying their present learning, for the most part, to the 21st-century. Stephen Bailey, in his book entitled The Purposes

of Education, maintains that few colleges and universities "have addressed themselves to the range of individual and society needs that characterize even the existential realities of the last decades of the 20th-century," for example, the need of life-long learning, the need for increased attention to "mastery skills" to overcome the draining anxieties of existential coping, the need to educate people in the negotiating arts, and "the need to help people have a truly creative engagement with the taunting and frequently fretful world of the free self." Ralph Tyler puts it this way: "you can tell you are educated if your options are increasing." This has to be of crucial concern for the student in the future, keeping his options open; a readiness to adapt using new skills as a result of the rapidly changing character of the world of work.